PATENT ABSTRACTS OF JAPAN

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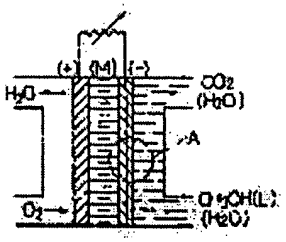
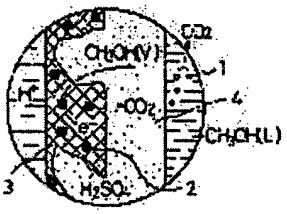
(54) BFE-TYPE ELECTRODE FOR FUEL CELL OR THE LIKE

(57)Abstract:

PURPOSE: To obtain such a BFE-type electrode that the coefficient of utilization of a catalyst is not lowered by carbon dioxide bubbles, a corrosive electrolyte does not need to be circulated and the refinement of water and fuel to be used is not required, by conjoining a water-repellent layer and a catalyst layer of a semi-water-repellent porous material to each other.

CONSTITUTION: A catalyst layer is made of an electroconductive porous material or semi-water-repellent porous material 3, which bears a catalyst 2. The semi-water-repellent porous material is produced by impregnating or mixing a water-repellent resin in a fine powder and subjecting them to heat treatment. A water-repellent layer is made of an electroconductive porous material or strongly-water-repellent porous material 4, which does not bear a catalyst. The strongly-water-repellent porous material is produced by impregnating or mixing a water-repellent resin in a fine powder and subjecting them to heat treatment. The catalyst layer and the water-repellent layer are pressed or hotpressed to be conjoined to each other to constitute a BFE-type electrode. An electrolyte is impregnated and retained in the hydrophilic part of the catalyst layer, while the water-repellent part thereof functions as a gas passage. Methanol as





fuel is dissolved and oxidized in the electrolyte in the presence of the catalyst 2. Before carbon dioxide gas resulting from the oxidization of the methanol becomes supersaturated to be bubbles, the gas goes into water-repellent pores, reaches the back side of the electrode and is discharged as bubbles into water.

LEGAL STATUS

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